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ABSTRACT

This study examines otitis media as a possible factor associated with increased risk for communicative handicap in a group of children with a possible vulnerability for language delay: "late-talkers." Speech and language outcomes at ages 3 and 4 were examined in 28 late talkers and 24 children with normal language development. Late talkers with a reported history of otitis media were not found to be at any additional risk for language disorder. The late talkers as a whole did have a substantial risk of continued expressive language delay, as their mean length of utterance, articulation, and expressive language skills were significantly lower than those of the control group. The normally developing speakers showed no differences for articulation or expressive language skills due to otitis media, but normally speaking children with otitis media histories did score lower on receptive language, a difference which was also associated with lower socioeconomic status. (14 references) (JDD)

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OTITIS MEDIA AND SPEECH/LANGUAGE DEVELOPMENT IN LATE-TALKERS

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The degree of increased risk for language disorder in children with a history of otitis media has become a matter of debate in recent literature. Many studies (Downs, Walker, & Northern 1988; Friel-Patti, Finitzo-Heiber, Conti & Brown 1982; Menyuk, 1986) report negative language outcomes associated with chronic otitis media. Other researchers, though, (Roberts et al., 1986; Fischler, Todd & Feldman, 1985; Greville, Keith & Laven, 1985; Bishop & Edmundson, 1986) report no important differences between the verbal skills of children who do and do not have positive histories otitis media. Bishop and Edmundson point out, however, that while otitis media alone may not constitute an increased risk for language disorder, it may interact with other risk factors in vulnerable children.

The current study examines otitis media as a possible factor associated with increased risk for communicative handicap in a group of children with a possible vulnerability for language delay: "late-talkers." These otherwise normal children fail to begin speaking and have small expressive vocabularies throughout the second and third year of life. While they are often considered "late bloomers" who will eventually show normal language ability, several recent studies (Paul, 1989; Rescorla, 1989a; Thal, 1989) suggest that they are at substantial risk for continued language delay. This study will look at the degree to which late talkers with and without positive histories of otitis media have differing speech and language outcomes, when compared to children who begin speaking at the normal time.

METHOD

Subjects. Speech and language outcome at ages three and four were examined in two groups of children: toddlers with a history of normal language development and those considered late talkers (LT). In each group, two subgroups were identified: one with a positive history of otitis media, and one with a negative history. Positive history of otitis media was defined (following Shriberg & Smith, 1983) on the basis of placement of myringotomy tubes or the presence of six or more "ear infections" treated by a physician before the second birthday, by parent report. Average number of ear infections before age two reported by parents in each of the four subgroups are given in Table 1.

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Children were placed in normal vs. LT groups on the basis of their expressive vocabulary size reported by parents on the Language Development Survey (Rescorla, 1989b). This checklist has been reported to show excellent validity, reliability, sensitivity and specificity in identifying children with language delay in the third year of life. Children who, at 18-23 months used fewer than 10 words or at 24-34 months used fewer than 50 words or no two word combinations were assigned to the LT group. Those at 18-23 months with more than 10 words and at 24-34 months with more than 50 words and the use of some two word combinations were assigned to the normal group. The groups were matched on the basis of age, sex ratio, socioeconomic status and birth order. Twenty-eight LT subjects were available for both years of follow-up. Twenty-four normal subjects participated at both follow-up evaluations. Demographic comparisons between the two groups at the initial evaluation, at age 18-34 months, are given in Table 2.

Procedures. All subjects were given speech reception screenings at 25 dB, using visually reinforced audiometry in a sound field in a sound-treated booth, at the first evaluation, when the Language Development Survey (LDS) was completed. All subjects passed these screenings. These results indicate that none of the children in the study was frankly hearing impaired. Between 15 and 33% of the children in each of the four subgroups had abnormal tympanograms at the time the LDS was completed, indicating the possibility of acute otitis media in a large proportion of subjects in all groups.

The subjects were seen again at ages three and four. To assess articulation performance, the Goldman-Fristoe Test of Articulation (1969) was recorded for each subject at age three, and the Word Articulation subtest of the Test of Language Development-Primary (Newcomer & Hammill, 1982) was given at age four. A sample of free speech was collected in a fifteen minute play interaction between the mother and child at ages three and four. Mean length of utterance was computed according to Brown's (1973) rules to assess language status at each age. In addition, expressive language and receptive language quotients from Test of Language Development-Primary were computed for the four-year old assessment.

RESULTS

For subjects with a history of LT, reported history of otitis media did not constitute any additional risk for language disorder. No significant differences were found between the OM+ and OM- groups on any of the speech or language measures for the LTs. The LT children did have a substantial risk of continued expressive language delay, though. Their MLU, articulation and expressive language quotients all were significantly lower than those of children with normal language histories. This was true for both LT OM+ and OM- subgroups. No deficits in receptive language were found for either LT subgroup.

For the normal speakers, no differences were found between the OM+ and OM- groups for articulation or expressive language skills. But there was a significant difference between these

subgroups on receptive language. This difference was found to be associated with SES. That is, the group of normal children with OM+ histories were also of significantly lower SES than the normal OM- group.

CONCLUSIONS

Children who are late to develop expressive language are at a considerable risk for continued language delay, at least until age four, according the results of this study. But this risk does not appear to be increased significantly by history of ear infections as reported by parents. Thus all toddlers who are late to begin speaking should be carefully monitored to ensure that language development is proceeding, regardless of whether they have a positive history of otitis media.

For toddlers who are developing language normally, this study, like Bishop & Edmunson (1986), suggests that OM appears to have an effect on language development primarily when it interacts with other factors, such as SES and family history. Thus history of OM in and of itself does not appear to constitute increased risk, but may operate with other factors in the child's development to constrain language growth. It should be noted, however, that even though receptive language scores for the OM+ normal children were lower than those of their OM- peers, all children in the normal group had receptive language quotients within the normal range. OM appears to have interacted with low SES to produce slightly lower comprehension performance that still falls within the range of normal development. This suggests clinically that children from low SES backgrounds with positive histories of OM may benetit from preschool language stimulation in order to optimize their language growth, even when frank language disorder is not present.

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Table 1.

Number of ear infections reported by parents

Subgroup	N of subjects	Mean	S.D.
Normal			
Otitis Media Positive	10	9.4	3.4
Otitis Media Negative	14	1.2	0.8
LT			
Otitis Media Positive	15	10.8	5.5
Otitis Media Negative	13	1.9	1.1

TABLE 2.

Mean (and s.d.) Speech and Language Scores for Subjects by Subgroup

Subgroup	Age 3		Age 4	
	MLU	Goldman-Fristoe %ile	MLU	Word Articulation standard score
Normal				
OM positive	3.96 (1.51)	51.9 (32.7)	4.70 (0.76)	11.4 (2.6)
OM negative	3.92 (0.88)	54.8 (33.5)	4.50 (0.88)	10.3 (3.7)
LT				
OM positive	2.44 (0.73)	13.0 (11.0)	4.02 (1.14)	6.7 (1.7)
OM negative	2.62 (0.82)	20.9 (20.1)	3.81 (1.04)	8.0 (2.6)